

Mineral Industry Surveys

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NICKEL IN JANUARY 2005

Reported domestic nickel consumption in January, on a daily average basis, was 19% greater than that of December 2004, according to the U.S. Geological Survey. Combined daily average consumption of nickel for stainless and alloy steels was 75.7 metric tons per day (t/d), 13% greater than the 67.1 t/d for December and 16% greater than the 65.2 t/d (revised) for January 2004. Consumption of >99.8% nickel metal to make superalloys (such as INCONEL 718 and Waspaloy) increased by 19% from December 2004 levels, on a daily average basis. Consumption to make corrosion-resistant, less stress-resistant nickel-base alloys (such as INCONEL 600 and Nickel 200) decreased slightly on a daily average basis. Sales to plating companies averaged 37.3 t/d, about 39% more than the December sales figure of 26.9 t/d.

On January 31, U.S. consumer stocks of cathode, pellets, briquets, and powder totaled 1,470 metric tons (t), 3% greater than the 1,430 t on December 31, 2004, and 6% greater than the 1,390 t reported for January 2004. Stocks in London Metal Exchange (LME) warehouses worldwide totaled 16,644 t on January 31, 2005, 20% less than the 20,898 t on December 31, 2004.

The United States imported 136,000 t of primary nickel in 2004, 8% more than the 125,000 t for 2003. Trade data for January will appear in a subsequent report.

Update: Nickel-cobalt hydrometallurgical plant becomes operational in the Philippines

On April 13, 2005, Coral Bay Nickel Corporation (CBNC) formally commissioned its US\$180-million hydrometallurgical processing plant near Bataraza on the island of Palawan. The plant is a joint venture of Sumitomo Metal Mining Company, Ltd. (SMM) (54% interest), Mitsui & Co., Ltd. (18%), Sojitz Corporation (18%), and a local Filipino company, Rio Tuba Nickel Mining Corporation (10%). The CBNC facility is designed to produce 10,000 metric tons per year (t/yr) of nickel

and 700 t/yr of cobalt as a mixed sulfide precipitate (Balitang Malacañang Office of the Press Secretary, 2005a¹, b§).

The Coral Bay project was launched in April 2002. Although trial runs with the plant circuitry had been underway since September 2004, the first shipment of precipitate was not made until March 2005. If all goes well, the new facility could produce 7,000 t of contained nickel and 500 t of cobalt in 2005 (Sumitomo Metal Mining Co., Ltd. and others, 2004).

The CBNC plant is designed to extract nickel from low-grade ores previously considered waste. Feed is currently coming from stockpiles of low-grade ore at the adjacent Rio Tuba Mine. The Rio Tuba Mine, an open pit laterite operation, has been producing direct shipping ore for Japan since 1976. The mine has been stockpiling its lower-grade ores for approximately 20 years and now has 16 million metric tons (Mt) of ore suitable for processing by CBNC. The stockpiled material and future production of similar material by Rio Tuba will provide CBNC with a minimum of 25 years of feed, or about 35 Mt of ore on a wet basis (Go, 2004§).

All of the precipitate is being exported to Japan, where the two metals are separated at SMM's Niihama refinery in Ehime prefecture. At Niihama, SMM uses matte chlorine leach electrowinning technology to produce both electrolytic nickel and electrolytic cobalt.

Reference Cited

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¹References that include a section mark (§) are found in the Internet References Cited section.

Balitang Malacañang Office of the Press Secretary, 2005b (April 13), PGMA switches on \$180M CBNC nickel plant in Palawan, Office of the Press Secretary, Manila, Philippines, accessed May 3, 2005, at URL <http://www.news.ops.gov.ph/archives2005/apr13.htm>.

Go, M.V., The Philippine Star, 2004 (July 4), DTI endorses Coral Bay Nickel's \$180-M project in Palawan, accessed April 4, 2005, at URL <http://www.palawan.com/businessnews.asp?id=127>.

TABLE 1
CONSUMPTION OF NICKEL (EXCLUSIVE OF SCRAP), BY FORM AND USE¹

(Metric tons, nickel content)

| Period | Cathodes, pellets, briquets, and powder | Ferronickel | Oxide-sinter, salts, and other forms | Total | Total year to date |
|---|--|-------------|---|--------------------|--------------------------|
| 2004: | | | | | |
| January | 4,300 | 595 | 34 | 4,930 | 4,930 |
| February | 4,950 | 455 | 26 | 5,430 | 10,400 |
| March | 5,020 | 529 | 36 | 5,590 | 15,900 |
| April | 4,670 | 458 | 52 | 5,180 | 21,100 |
| May | 5,280 | 528 | 27 | 5,840 | 27,000 |
| June | 5,230 | 556 | 39 | 5,830 | 32,800 |
| July | 4,790 | 536 | 43 | 5,370 | 38,200 |
| August | 4,850 | 677 | 36 | 5,570 | 43,700 |
| September | 4,540 ^r | 549 | 47 | 5,140 ^r | 48,900 ^r |
| October | 5,080 | 734 | 41 | 5,860 | 54,700 ^r |
| November | 4,610 | 504 | 37 | 5,150 | 59,900 ^r |
| December ^r | 4,520 | 482 | 36 | 5,040 | 64,900 ^r |
| January-December | 57,900 | 6,600 | 454 | 64,900 | XX |
| 2005: | | | | | |
| January: | | | | | |
| Steel: | | | | | |
| Stainless and heat resisting | 929 | 381 | W | 1,310 | 1,310 |
| Alloy (excludes stainless) | 792 | 207 | -- | 999 | 999 |
| Superalloys | 1,090 | -- | W | 1,090 | 1,090 |
| Copper-nickel alloys | W | -- | -- | W | W |
| Electric, magnetic, and expansion alloys | 14 | -- | -- | 14 | 14 |
| Other nickel & nickel alloys | W | -- | W | W | W |
| Cast iron | W | -- | -- | W | W |
| Electroplating (sales to platers) | 1,160 | -- | -- | 1,160 | 1,160 |
| Chemical and chemical uses | W | -- | -- | W | W |
| Other uses | 1,410 | -- | 40 | 1,450 | 1,450 |
| Total reported | 5,390 ² | 588 | 40 | 6,020 | 6,020 |
| Total all companies (calc) ³ | XX | XX | XX | 11,300 | 11,300 |

^rRevised. W Withheld to avoid disclosing company proprietary data; included in "Other uses" category. XX Not applicable. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Of consumption, 4,410 metric tons were consumed as cathodes and pellets, the remainder as briquets and powder.

³Figures represent calculated apparent consumption; based on the revised proportion of reported primary consumption (53.17%) to apparent primary consumption for 2003.

TABLE 2
ENDING STOCKS OF NICKEL (EXCLUSIVE OF SCRAP) HELD BY CONSUMERS, BY FORM AND USE ^{1,2}
(Metric tons, nickel content)

| Period | Cathodes, pellets, briquets, and powder | Ferronickel | Oxide-sinter, salts, and other forms | Total |
|---|---|------------------|--------------------------------------|--------------------|
| 2004: | | | | |
| January | 1,390 | 186 | 55 | 1,630 |
| February | 1,660 | 111 | 44 | 1,810 |
| March | 1,630 | 108 | 40 | 1,780 |
| April | 1,760 | 227 | 34 | 2,020 |
| May | 1,380 ^r | 158 | 42 | 1,580 ^r |
| June | 1,470 ^r | 185 | 45 | 1,700 ^r |
| July | 1,270 ^r | 147 | 30 | 1,440 ^r |
| August | 1,490 | 139 | 32 ^r | 1,660 ^r |
| September ^r | 1,640 | 184 | 31 | 1,860 |
| October | 1,400 ^r | 146 ^r | 50 | 1,590 ^r |
| November ^r | 1,340 | 170 | 58 | 1,570 |
| December ^r | 1,430 | 147 | 45 | 1,620 |
| 2005: | | | | |
| January: | | | | |
| Steel (stainless, heat resisting and alloy) | 594 | 173 | (3) | 767 |
| Nonferrous alloys ⁴ | 855 | (3) | (3) | 855 |
| Foundry (cast irons) | (3) | (3) | -- | (3) |
| Chemical (catalysts, ceramics, plating salt, etc.) and unspecified uses | 21 | 20 | 52 | 93 |
| Total | 1,470 | 193 | 52 | 1,720 |

^rRevised. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Stocks held by companies that consume nickel in more than one end use category are credited to the major category. Stocks are subject to revisions owing to inventory adjustments.

³Included in the "Chemical and unspecified uses" category.

⁴Includes superalloys, nickel-copper and copper-nickel alloys, permanent magnet alloys, and other nickel alloys.

TABLE 3
CONSUMPTION AND ENDING STOCKS OF PURCHASED SECONDARY NICKEL, BY USE¹

(Metric tons, nickel content)

| Period | Consumption | | | Stocks | | |
|------------------------|----------------------------|-------------------------------|---------------------|----------------------------|-------------------------------|--------------------|
| | Ferrous scrap ² | Nonferrous scrap ³ | Total scrap | Ferrous scrap ² | Nonferrous scrap ³ | Total scrap |
| 2004: | | | | | | |
| January | 5,150 ^r | 698 | 5,850 ^r | 2,610 ^r | 73 | 2,680 ^r |
| February | 4,830 ^r | 708 | 5,540 ^r | 2,620 ^r | 79 | 2,700 ^r |
| March | 5,570 ^r | 937 | 6,510 ^r | 3,180 ^r | 80 | 3,260 ^r |
| April | 5,330 ^r | 865 | 6,190 ^r | 2,860 ^r | 82 | 2,940 ^r |
| May | 5,260 ^r | 801 | 6,060 ^r | 2,640 ^r | 63 | 2,700 ^r |
| June | 5,140 ^r | 804 | 5,940 ^r | 2,660 ^r | 85 | 2,750 ^r |
| July | 4,900 ^r | 672 ^r | 5,570 ^r | 2,550 ^r | 76 | 2,630 ^r |
| August ^r | 5,060 | 956 | 6,020 | 2,320 | 73 | 2,390 |
| September ^r | 4,440 | 812 | 5,250 | 2,710 | 75 | 2,780 |
| October ^r | 4,900 | 709 | 5,610 | 2,750 | 70 | 2,820 |
| November ^r | 4,750 | 736 | 5,490 | 2,530 | 63 | 2,590 |
| December | 5,230 | 581 ^r | 5,810 | 2,290 ^r | 65 | 2,360 ^r |
| January-December | 60,600 ^r | 9,280 ^r | 69,800 ^r | XX | XX | XX |
| 2005: | | | | | | |
| January | 4,690 | 676 | 5,370 | 2,330 | 80 | 2,410 |

^rRevised. XX Not applicable.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Nickel content is calculated from an average nickel content and the reported gross weight of scrap.

³Combined consumption and stocks of aluminum-base, copper-base, and nickel-base scrap.

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF NICKEL, BY COUNTRY¹

(Metric tons, nickel content)²

| Period and country of origin | Cathodes pellets, and briquets | Powder and flakes | Ferro-nickel | Metal-lurgical-grade oxide | Waste and scrap | Stainless steel scrap | Chemicals | Total ³ | Total year to date ⁴ | Wrought nickel |
|------------------------------|--------------------------------|-------------------|-----------------|----------------------------|-----------------|-----------------------|-----------|--------------------|---------------------------------|----------------|
| 2003: | | | | | | | | | | |
| December | 6,230 | 860 | 471 | (5) | 530 | 821 | 284 | 9,190 | 137,000 | 34 |
| 2004: | | | | | | | | | | |
| January | 7,360 | 829 | 1,040 | 40 | 489 | 933 | 435 | 11,100 | 11,100 | 77 |
| February | 7,200 | 834 | 1,070 | 161 | 667 | 1,020 | 485 | 11,400 | 22,600 | 49 |
| March | 10,700 | 812 | 806 | 134 | 1,430 | 1,660 | 376 | 15,900 | 38,400 | 72 |
| April | 10,700 | 720 | 1,680 | 23 | 574 | 908 | 296 | 14,900 | 53,400 | 53 |
| May | 8,530 | 564 | 941 | -- | 698 | 680 | 381 | 11,800 | 65,200 | 55 |
| June | 9,190 | 732 | 978 | -- | 553 | 680 | 324 | 12,500 | 77,600 | 86 |
| July | 7,370 | 914 | 1,070 | -- | 624 | 663 | 374 | 11,000 | 88,600 | 79 |
| August | 9,770 | 800 | 1,020 | 24 | 585 | 928 | 434 | 13,600 | 102,000 | 116 |
| September | 6,590 | 571 | 1,080 | 207 | 689 | 697 | 339 | 10,200 | 112,000 | 88 |
| October | 11,100 | 976 | 1,280 | 210 | 535 | 780 | 321 | 15,300 | 128,000 | 43 |
| November | 9,140 | 659 | 1,240 | 240 | 602 | 696 | 378 | 13,000 | 141,000 | 33 |
| December: | | | | | | | | | | |
| Australia | 900 | 20 | -- | -- | -- | -- | -- | 920 | 11,400 | -- |
| Brazil | -- | -- | -- | -- | 8 | -- | -- | 8 | 2,080 | -- |
| Canada | 5,130 | 349 | -- | 170 | 70 | 568 | -- | 6,280 | 69,600 | -- |
| Colombia | -- | -- | 242 | -- | -- | 4 | -- | 246 | 3,280 | -- |
| Dominican Republic | -- | -- | 1,320 | -- | -- | 1 | -- | 1,320 | 8,710 | -- |
| Finland | 100 | -- | -- | -- | -- | 1 | 55 | 156 | 6,490 | -- |
| France | 77 | -- | 87 ⁶ | -- | 97 | -- | 10 | 271 | 2,620 | 2 |
| Germany | -- | (5) | -- | -- | 50 | -- | 52 | 102 | 2,040 | 25 |
| Japan | -- | 4 | -- | -- | 1 | 2 | 60 | 67 | 854 | 7 |
| Mexico | -- | -- | -- | -- | 27 | 144 | -- | 171 | 2,200 | -- |
| New Caledonia | -- | -- | 100 | -- | -- | -- | -- | 100 | 1,150 | -- |
| Norway | 1,170 | -- | -- | -- | -- | -- | -- | 1,170 | 14,800 | -- |
| Russia | 1,940 | 293 | -- | -- | -- | -- | -- | 2,230 | 20,000 | -- |
| South Africa | -- | 40 | -- | -- | -- | -- | -- | 40 | 817 | -- |
| Sweden | -- | -- | -- | -- | -- | -- | -- | -- | 42 | -- |
| United Kingdom | 9 | 98 | -- | -- | 78 | -- | 13 | 198 | 3,670 | 2 |
| Venezuela | -- | -- | -- | -- | 5 | 13 | -- | 18 | 443 | -- |
| Zimbabwe | 20 | -- | -- | -- | -- | -- | -- | 20 | 941 | -- |
| Other | -- | 10 | -- | -- | 67 | 602 | 105 | 784 | 3,530 ⁶ | 10 |
| Total | 9,340 | 814 | 1,750 | 170 | 403 | 1,340 | 295 | 14,100 | 155,000 | 46 |
| 2004: January-December | 107,000 | 9,220 | 14,000 | 1,210 | 7,850 | 11,000 | 4,440 | 155,000 | XX | 796 |
| 2003: January-December | 99,300 | 9,130 | 13,100 | 91 | 4,790 | 6,690 | 3,800 | 137,000 | XX | 660 |

XX Not applicable. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²The nickel contents are assumed to be as follows: metallurgical-grade oxide (77%), waste and scrap (50%), and stainless steel scrap (7.5%). The chemicals category includes chlorides (25%); sulfates (22%); other salts (22%); supported catalysts (22%); and oxide, sesquioxide, and hydroxide (65%).

³Excludes wrought nickel.

⁴May include revisions for prior months.

⁵Less than 1/2 unit.

⁶All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.

TABLE 5
U.S. EXPORTS OF NICKEL, BY COUNTRY¹

(Metric tons, nickel content)²

| Period and country of destination | Cathodes pellets, and briquets | Powder and flakes | Ferro- nickel | Metal- lurgical- grade oxide | Waste and scrap | Stainless steel scrap | Chemicals | Total ³ | Total year to date | Wrought nickel |
|--------------------------------------|--------------------------------------|-------------------------|------------------|---------------------------------------|-----------------------|-----------------------------|-----------|--------------------|--------------------------|-------------------|
| 2003: | | | | | | | | | | |
| December | 44 | 92 | 10 | 4 | 809 | 3,190 | 441 | 4,590 | 53,600 | 72 |
| 2004: | | | | | | | | | | |
| January | 52 | 129 | 15 | 5 | 657 | 2,370 | 399 | 3,630 | 3,630 | 153 |
| February | 85 | 166 | -- | 17 | 540 | 2,550 | 396 | 3,750 | 7,380 | 54 |
| March | 116 | 150 | (4) | 8 | 1,000 | 3,800 | 497 | 5,570 | 12,900 | 59 |
| April | 144 | 132 | 3 | 8 | 1,070 | 2,660 | 563 | 4,570 | 17,500 | 227 |
| May | 54 | 127 | 23 | 4 | 1,290 | 3,100 | 323 | 4,920 | 22,400 | 120 |
| June | 187 | 138 | 3 | 4 | 1,310 | 4,720 | 567 | 6,930 | 29,400 | 65 |
| July | 18 | 171 | (4) | 2 | 1,160 | 2,600 | 473 | 4,420 | 33,800 | 100 |
| August | 39 | 172 | -- | 1 | 1,190 | 2,330 | 200 | 3,940 | 37,700 | 68 |
| September | 112 | 238 | -- | 7 | 1,170 | 2,610 | 498 | 4,640 | 42,400 | 86 |
| October | 60 | 257 | 1 | 2 | 1,110 | 3,620 | 197 | 5,240 | 47,600 | 44 |
| November | 77 | 257 | 1 | 45 | 890 | 2,530 | 285 | 4,080 | 51,700 | 42 |
| December: | | | | | | | | | | |
| Australia | -- | (4) | -- | -- | 41 | -- | -- | 41 | 122 | -- |
| Belgium | -- | 1 | -- | -- | -- | 3 | 8 | 12 | 256 | 1 |
| Canada | 1 | 5 | 22 | -- | 687 | 137 | 43 | 895 | 14,000 | 6 |
| China | -- | 64 | 1 | -- | 32 | 1,010 | 20 | 1,130 | 12,400 | 13 |
| Finland | -- | -- | -- | -- | 16 | 439 | -- | 455 | 5,660 | -- |
| Germany | (4) | 14 | -- | 87 | 16 | 5 | 6 | 128 | 849 | 5 |
| India | -- | -- | -- | -- | -- | 243 | (4) | 243 | 1,940 | (4) |
| Italy | -- | (4) | -- | -- | -- | -- | 1 | 1 | 85 | 1 |
| Japan | -- | 5 | -- | 1 | 44 | 18 | 7 | 75 | 1,100 | 26 |
| Korea, Republic of | -- | 8 | -- | -- | -- | 88 | 6 | 102 | 7,000 | 1 |
| Mexico | 24 | 27 | -- | -- | -- | 107 | 8 | 166 | 1,240 | 21 |
| Netherlands | -- | 16 | -- | -- | -- | 80 | -- | 96 | 1,260 | 3 |
| South Africa | -- | -- | -- | 10 | -- | -- | 7 | 17 | 72 | -- |
| Spain | -- | (4) | -- | -- | -- | 370 | -- | 370 | 696 | (4) |
| Sweden | -- | -- | -- | -- | -- | -- | (4) | (4) | 350 | (4) |
| Taiwan | 2 | 4 | -- | -- | 14 | 259 | 8 | 287 | 3,400 | 1 |
| United Kingdom | -- | 2 | -- | -- | 174 | 9 | -- | 185 | 1,270 | 5 |
| Other | -- | 50 | -- | (4) | 9 | 208 | 113 | 380 | 4,580 | 12 |
| Total | 27 | 196 | 23 | 98 | 1,030 | 2,980 | 227 | 4,580 | 56,300 | 95 |
| 2004:January-December | 972 | 2,130 | 68 | 201 | 12,400 | 35,900 | 4,630 | 56,300 | XX | 1,110 |
| 2003:January-December | 996 | 1,100 | 182 | 160 | 9,460 | 37,800 | 3,900 | 53,600 | XX | 2,890 |

XX Not applicable. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²The nickel contents are assumed to be as follows: metallurgical-grade oxide (77%), waste and scrap (50%), and stainless steel scrap (7.5%). The chemicals category includes chlorides (25%); sulfates (22%); other salts (22%); supported catalysts (22%); and oxide, sesquioxide, and hydroxide (65%).

³Excludes wrought nickel.

⁴Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF NICKEL ALLOYS, BY COUNTRY¹

(Metric tons, gross weight)

| Period and country of origin | Unwrought alloyed ingot | Bars, rods and profiles | Wire | Plates and sheets | Foil | Tubes and pipes | Other alloyed articles | Total | Total year to date |
|---------------------------------|-------------------------------|-------------------------------|-------|-------------------------|------|-----------------------|------------------------------|--------|--------------------------|
| 2003: | | | | | | | | | |
| December | 314 | 169 | 388 | 215 | 45 | 704 | 147 | 1,980 | 18,300 |
| 2004: | | | | | | | | | |
| January | 102 | 278 | 286 | 193 | 14 | 134 | 133 | 1,140 | 1,140 |
| February | 165 | 214 | 362 | 251 | 8 | 374 | 238 | 1,610 | 2,750 |
| March | 102 | 166 | 446 | 213 | 18 | 362 | 459 | 1,770 | 4,520 |
| April | 345 | 255 | 504 | 164 | 44 | 773 | 172 | 2,260 | 6,770 |
| May | 123 | 269 | 494 | 131 | 14 | 231 | 115 | 1,380 | 8,150 |
| June | 227 | 344 | 517 | 301 | 40 | 136 | 100 | 1,670 | 9,820 |
| July | 271 | 322 | 504 | 192 | 32 | 140 | 87 | 1,550 | 11,400 |
| August | 324 | 251 | 496 | 236 | 31 | 89 | 109 | 1,540 | 12,900 |
| September | 528 | 193 | 440 | 192 | 30 | 317 | 79 | 1,780 | 14,700 |
| October | 295 | 285 | 477 | 215 | 7 | 148 | 206 | 1,630 | 16,300 |
| November | 245 | 247 | 624 | 280 | 41 | 246 | 233 | 1,920 | 18,200 |
| December: | | | | | | | | | |
| Australia | 73 | -- | -- | -- | -- | -- | -- | 73 | 941 |
| Belgium | 12 | -- | (2) | -- | -- | -- | (2) | 12 | 139 |
| Canada | -- | -- | 1 | -- | -- | 4 | (2) | 5 | 191 |
| China | -- | -- | -- | -- | -- | -- | 52 | 52 | 468 |
| France | -- | -- | 161 | 5 | -- | 8 | 2 | 176 | 1,650 |
| Germany | 47 | 148 | 212 | 207 | 43 | 69 | 1 | 727 | 7,890 |
| Italy | (2) | 88 | 2 | 3 | -- | -- | 5 | 98 | 1,370 |
| Japan | -- | -- | 10 | 1 | -- | 3 | 1 | 15 | 643 |
| Mexico | -- | -- | -- | -- | -- | -- | 39 | 39 | 462 |
| Netherlands | -- | -- | (2) | -- | -- | -- | 13 | 13 | 191 |
| South Africa | 59 | -- | -- | -- | -- | -- | -- | 59 | 456 |
| Sweden | -- | 17 | 194 | 3 | -- | (2) | -- | 214 | 2,970 |
| United Kingdom | 28 | 45 | 2 | (2) | -- | 1 | 19 | 95 | 1,140 |
| Other | 50 | 2 | 6 | 7 | -- | 21 | 13 | 99 | 1,390 |
| Total | 269 | 300 | 588 | 226 | 43 | 106 | 145 | 1,680 | 19,900 |
| 2004: January-December | 3,000 | 3,130 | 5,740 | 2,590 | 322 | 3,060 | 2,080 | 19,900 | XX |
| 2003: January-December | 1,910 | 2,520 | 5,760 | 3,330 | 215 | 2,770 | 1,770 | 18,300 | XX |

XX Not applicable. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 7
U.S. EXPORTS OF NICKEL ALLOYS, BY COUNTRY¹

(Metric tons, gross weight)

| Period and country of destination | Unwrought alloyed ingot | Bars, rods and profiles | Wire | Plates and sheets | Foil | Tubes and pipes | Other alloyed articles | Total | Total year to date |
|--------------------------------------|-------------------------------|-------------------------------|-------|-------------------------|------|-----------------------|------------------------------|--------|--------------------------|
| 2003: | | | | | | | | | |
| December | 379 | 571 | 69 | 350 | 107 | 203 | 199 | 1,880 | 25,900 |
| 2004: | | | | | | | | | |
| January | 522 | 731 | 155 | 366 | 9 | 118 | 231 | 2,130 | 2,130 |
| February | 543 | 777 | 155 | 343 | 15 | 172 | 299 | 2,300 | 4,440 |
| March | 980 | 640 | 92 | 491 | 30 | 184 | 333 | 2,750 | 7,190 |
| April | 283 | 649 | 99 | 472 | 22 | 144 | 303 | 1,970 | 9,160 |
| May | 457 | 976 | 168 | 334 | 46 | 119 | 543 | 2,640 | 11,800 |
| June | 511 | 722 | 130 | 427 | 33 | 170 | 272 | 2,270 | 14,100 |
| July | 614 | 1,100 | 177 | 350 | 11 | 132 | 244 | 2,630 | 16,700 |
| August | 629 | 760 | 176 | 234 | 10 | 123 | 221 | 2,150 | 18,800 |
| September | 1,010 | 1,080 | 169 | 389 | 16 | 163 | 257 | 3,090 | 21,900 |
| October | 517 | 776 | 190 | 390 | 26 | 178 | 236 | 2,310 | 24,200 |
| November | 613 | 1,110 | 183 | 327 | 21 | 148 | 256 | 2,660 | 26,900 |
| December: | | | | | | | | | |
| Australia | -- | 2 | (2) | 1 | -- | (2) | 1 | 4 | 263 |
| Belgium | 74 | 127 | 1 | 4 | -- | (2) | 2 | 208 | 2,650 |
| Canada | 198 | 35 | 8 | 27 | 3 | 35 | 25 | 331 | 2,900 |
| China | 1 | 53 | 5 | 26 | (2) | 8 | 44 | 137 | 1,220 |
| France | 68 | 330 | 1 | 77 | 1 | 2 | 1 | 480 | 3,850 |
| Germany | 27 | 55 | 12 | 15 | (2) | 6 | (2) | 115 | 1,210 |
| India | 1 | 2 | -- | 1 | -- | 8 | -- | 12 | 115 |
| Ireland | (2) | -- | 1 | 1 | -- | -- | (2) | 2 | 24 |
| Italy | 25 | 1 | (2) | 4 | (2) | 11 | (2) | 41 | 1,140 |
| Japan | 411 | 36 | (2) | 10 | (2) | 6 | 4 | 467 | 3,790 |
| Korea, Republic of | -- | 6 | 7 | 26 | (2) | 1 | 1 | 41 | 913 |
| Mexico | 1 | 15 | 57 | 33 | (2) | 12 | 116 | 234 | 3,230 |
| Netherlands | -- | 3 | 27 | 9 | -- | 3 | (2) | 42 | 369 |
| Singapore | (2) | 11 | (2) | 4 | (2) | 18 | 2 | 35 | 209 |
| Spain | 2 | (2) | -- | 2 | (2) | -- | 17 | 21 | 83 |
| Sweden | -- | -- | (2) | 20 | -- | -- | (2) | 20 | 166 |
| Switzerland | -- | 1 | -- | 1 | -- | 1 | -- | 3 | 244 |
| Taiwan | -- | 14 | -- | 14 | -- | 2 | 3 | 33 | 409 |
| United Kingdom | 6 | 333 | 8 | 25 | (2) | 12 | 10 | 394 | 4,100 |
| Other | 9 | 79 | 30 | 50 | 1 | 25 | 18 | 212 | 2,870 |
| Total | 823 | 1,100 | 157 | 350 | 5 | 150 | 244 | 2,830 | 29,700 |
| 2004: January-December | 7,510 | 10,400 | 1,850 | 4,470 | 243 | 1,800 | 3,440 | 29,700 | XX |
| 2003: January-December | 6,660 | 7,960 | 1,190 | 3,960 | 662 | 2,420 | 3,050 | 25,900 | XX |

XX Not applicable. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 8
NICKEL CONSUMPTION IN CAST AND WROUGHT PRODUCTS

| | Percent | |
|-------------------------------------|---------|------|
| | Wrought | Cast |
| January 2005: | | |
| Stainless and heat resisting steels | 100 | (1) |
| Alloy steels | 100 | (1) |
| Superalloys | 89 | 11 |
| Copper-nickel alloys | 94 | 6 |
| Other nickel-base alloys | 100 | (1) |

¹Less than 1/2 unit.

TABLE 9
NICKEL PRICES

| Date | Platts Metals Week | | | | American Metal Market, 18/8 Stainless steel scrap Pittsburgh |
|--------------------------|--------------------------------|---------------------------------------|---|--|--|
| | Cathode NY Dealer \$/lb. | LME Cash mean ¹ \$/t | LME Cash mean ¹ \$/lb. | 18/8 Stainless steel scrap Free market \$/long ton (gw) | 18/8 Stainless steel scrap \$/long ton (gw) |
| 2004: | | | | | |
| Average for month of: | | | | | |
| January | 6.900 | 15,326.548 | 6.952 | 1,517 | 1,463 |
| February | 6.968 | 15,145.125 | 6.870 | 1,537 | 1,585 |
| March | 6.203 | 13,715.000 | 6.221 | 1,458 | 1,563 |
| April | 6.056 | 12,848.125 | 5.828 | 1,397 | 1,503 |
| May | 5.185 | 11,118.289 | 5.043 | 1,281 | 1,367 |
| June | 6.063 | 13,533.523 | 6.139 | 1,241 | 1,208 |
| July | 6.990 | 15,023.295 | 6.814 | 1,430 | 1,402 |
| August | 6.320 | 13,679.524 | 6.205 | 1,481 | 1,560 |
| September | 6.112 | 13,270.909 | 6.020 | 1,405 | 1,470 |
| October | 6.523 | 14,404.286 | 6.534 | 1,413 | 1,470 |
| November | 6.488 | 14,045.455 | 6.371 | 1,506 | 1,562 |
| December | 6.286 | 13,768.810 | 6.245 | 1,457 | 1,523 |
| Yearly average | 6.341 | 13,823.241 | 6.270 | 1,427 | 1,473 |
| 2005: | | | | | |
| Average for week ending: | | | | | |
| January 7 | 6.65-7.18 | 14,292.500 | 6.483 | 1,400-1,450 | 1,500-1,525 |
| January 14 | 6.97-7.05 | 14,817.000 | 6.721 | 1,450-1,500 | 1,500-1,525 |
| January 21 | 6.74-6.94 | 14,492.000 | 6.573 | 1,500-1,550 | 1,500-1,525 |
| January 28 | 6.63-6.76 | 14,365.000 | 6.516 | 1,500-1,550 | 1,500-1,525 |
| February 4 | 6.82-6.90 | 14,599.500 | 6.622 | 1,500-1,540 | 1,500-1,525 |
| February 11 | 6.89-7.22 | 14,995.500 | 6.802 | 1,500-1,540 | 1,500-1,525 |
| February 18 | 7.18-7.29 | 15,418.500 | 6.994 | 1,500-1,540 | 1,500-1,525 |
| February 25 | 7.37-7.62 | 15,987.500 | 7.252 | 1,500-1,540 | 1,500-1,525 |
| Average for month of: | | | | | |
| January | 6.748 | 14,501.250 | 6.578 | 1,488 | 1,513 |
| February | 7.065 | 15,344.625 | 6.960 | 1,520 | 1,513 |

¹Mean of the cash buyer price and the cash seller and settlement price.

